**Von der Wahrheitstabelle zur Gleichung und zurück – Anleitung und Übungen**

1. Stellen Sie die logischen Gleichungen zu den nachfolgenden Wahrheitstabellen auf:

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | X | \_\_ \_\_ \_\_  A ^ B v A ^ B |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | X | \_\_\_ \_\_\_ \_\_\_ \_\_\_  A ^ B v A ^ B v A ^ B |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C | X | \_\_ \_\_ \_\_ \_\_  A ^ B ^ C v A ^ B ^ C v A ^ B ^ C |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

1. Zeichnen Sie zu den nachfolgenden Gleichungen die Wahrheitstabellen auf:

|  |  |  |
| --- | --- | --- |
| Q1 | Q2 | X |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

* 1. \_\_ \_\_ \_\_  
     X = Q1 ^ Q2 v Q1 ^ Q2
  2. \_\_ \_\_ \_\_ \_\_ \_\_ \_\_  
     Z = Q1 ^ Q2 ^ Q3 v Q1 ^ Q2 ^ Q3 v Q1 ^ Q2 ^ Q3
  3. \_\_ \_\_ \_\_ \_\_ \_\_ \_\_ \_\_  
     M = Q1 ^ Q2 ^ Q3 v Q1 ^ Q2 ^ Q3 v Q1 ^ Q2 ^ Q3 v Q1 ^ Q2 ^ Q3

Zu b.

|  |  |  |  |
| --- | --- | --- | --- |
| Q1 | Q2 | Q3 | Z |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Zu c.

|  |  |  |  |
| --- | --- | --- | --- |
| Q1 | Q2 | Q3 | M |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |